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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,519	10/25/2000	Jeffrey H. Mumm	38,096	2591

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CAROL WILSON
BP AMERICA INC.
MAIL CODE 5 EAST
4101 WINFIELD ROAD
WARRENVILLE, IL 60555

EXAMINER

GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/696,519

Applicant(s)

MUMM ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 34-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 34-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/15/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/15/04 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Double Patenting

3. Applicant is advised that should claim 1 be found allowable, claim 25 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

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evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-4, 9-16, 18, 19, 21-27, 34, 35, and 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smedberg (U.S. Patent 3,684,600) in view of the admitted prior art (Claim 1 and Specification pages 1-7).

Smedberg discloses a process for manufacturing a tufted carpet with high fuzz resistance (Column 1, lines 14-24 and Column 2, lines 10-12 and Column 5, lines 74-75). Smedberg teaches a method for manufacturing the tufted carpet comprising supplying a tufted primary backing having a bottom surface (stitched side), applying to the bottom surface a low viscosity aqueous pre-coat adhesive solution (stitch bind composition), (optionally) drying the pre-coat, coating a melted thermoplastic binder on the pre-coat, and laminating a secondary backing to the primary backing through the adhesive and binder (Figure and Column 3, lines 1-5, 11-14 and Column 6, lines 28-34 and 49-51). Smedberg teaches the primary backing may comprise spunbound polypropylene (Column 8, lines 36-38). Smedberg teaches the pre-coat adhesive comprises an aqueous component and an organic polymer component that is film forming, crosslinkable, and thermoplastic (e.g. polyethylene, ethylene/acrylic acid copolymers, styrene/butadiene copolymers, etc.) (Column 5, lines 27-47 and Column 6, lines 28-34 and 49-51). Smedberg teaches the organic polymer component is less than 40 percent of the pre-coat adhesive (Column 6, lines 30-33). Smedberg teaches the pre-coat adhesive has a low viscosity, 2-2000 cps, to be effective, i.e. because the pre-coat has a low viscosity it can readily penetrate

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the fiber bundles on the stitched side of the primary backing (Column 3, lines 61-74 and Column 5, lines 18-20). Smedberg teaches the pre-coat adhesive is applied in amounts of 1.5 oz or less. However, Smedberg teaches the necessary amount of pre-coat adhesive is dependent on the carpet yarn density and the effectiveness of the adhesive itself (Column 6, lines 52-60).

Smedberg further teaches the thermoplastic binder comprises polyethylene copolymers (Column 7, lines 1-3). Smedberg is silent as to applying the thermoplastic binder in a manner other than as a melted coating such as by extrusion or melting/softening an applied solid binder. However, it is noted Smedberg teaches the thermoplastic binder can be applied by means other than roll coating (Column 3, lines 37-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the thermoplastic binder taught by Smedberg using any well known and conventional technique such as by extrusion or melting/softening an applied solid, e.g. as a needled fabric, film, powder, fiber, etc., binder as shown for example by the admitted prior art as these were well known alternatives in the art for applying the thermoplastic binder to the primary backing wherein the use of any one of the techniques, coating a melted binder, extruding the binder, or melting an applied solid binder, would have the same result.

Regarding claims 9-12, 35, 40, 42, 43, and 45, Smedberg is silent as to the tufted carpet comprising a primary backing and secondary backing made of a woven polypropylene fabric and face yarns made of nylon, polyester, or polypropylene filaments. However, Smedberg is not limited to any particular type of primary backing, the suggestion of spunbound polypropylene is merely exemplary, or secondary backing, and Smedberg is not limited to any particular type of face yarn filaments. It would have been obvious to one of ordinary skill in the art at the time invention was made to use as the primary backing and secondary backing taught by Smedberg

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any of the well known and conventional primary and secondary backing materials such as woven polypropylene fabric as shown for example by the admitted prior art as only the expected results would be achieved. Furthermore, it would have been obvious to one of ordinary skill in the art at the time invention was made would to use as the face yarns taught by Smedberg any of the well known and conventional face yarn materials such as nylon, polyester, or olefin (including polypropylene) filaments as shown for example by the admitted prior art as only the expected results would be achieved.

Regarding claim 26, it is noted Smedberg as modified by the admitted prior art teaches using a pre-coat adhesive comprising an organic component in an aqueous solution, i.e. the adhesive includes a liquid component. It is noted that while an aqueous solution is one that is made from, with, or by water, Smedberg does not specifically recite using water as the liquid component of the solution. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use water as the liquid component of the aqueous solution taught by Smedberg as modified by the admitted prior art water as it is well known and conventional in the art to use water as the liquid component in aqueous solutions.

The admitted prior art discloses known techniques for manufacturing a carpet comprising a thermoplastic binder applied to the stitched side of a tufted primary backing. The admitted prior art teaches the method for manufacturing the carpet comprises supplying a tufted primary backing having a bottom surface (stitched side), applying to the bottom surface a thermoplastic binder, and laminating an additional backing to the primary backing through the binder (Specification page 1, lines 20-22 and page 2, lines 25-39 and page 3, lines 1-26). The admitted prior art teaches the primary and secondary backings may comprise woven polypropylene fabric

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(Specification page 1, lines 35-39). The admitted prior art teaches the face yarn of the tufted carpet is made from various materials including nylon, polyester, olefin, etc. (Specification page 2, lines 1-3). The admitted prior art teach using polypropylene as the thermoplastic binder (Page 3, lines 29-32 and Page 4, lines 22-38). The admitted prior art teaches it was known to apply the thermoplastic binder by extruding the binder onto the bottom surface of the primary backing or by applying a solid binder, e.g. as a film, powder, fiber, etc., and then melting it (Claim 1, lines 7-10 and Specification page 3, lines 1-13). Additionally, the admitted prior art teaches it was known to apply the thermoplastic binder by needling a nonwoven thermoplastic binder fabric to the primary backing (Specification page 3, lines 29-32).

6. Claims 1-4, 9-16, 18, 19, 21-27, 34, 35, and 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art in view of Smedberg.

The admitted prior art is described in full detail above. The admitted prior art additionally teaches the carpets with thermoplastic binders have a tendency to fuzz during use (Page 5, lines 10-15). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate into the admitted prior art the aqueous pre-coat adhesive solution taught by Smedberg (Smedberg is described in full detail above) as Smedberg discloses a process similar to that of the admitted prior art, i.e. applying a thermoplastic binder to the bottom surface of a tufted primary backing, wherein the aqueous pre-coat adhesive is applied to increase the fuzz resistance of the carpet.

Regarding claim 26, it is noted the admitted prior art as modified by Smedberg teaches using a pre-coat adhesive comprising an organic component in an aqueous solution, i.e. the adhesive includes a liquid component. It is noted that while an aqueous solution is one that is

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made from, with, or by water, neither the admitted prior art nor Smedberg specifically recite using water as the liquid component of the solution. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use water as the liquid component of the aqueous solution taught by the admitted prior art as modified by Smedberg as it is well known and conventional in the art to use water as the liquid component in aqueous solutions.

7. Claims 6, 7, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smedberg and the admitted prior art as applied above in paragraph 5 or in the alternative as applied above in paragraph 6, and further in view of Kato (U.S. Patent 4,836,871).

Regarding claims 6 and 7, Smedberg and the admitted prior art as applied above teach all of the limitations in the claims except for a teaching on applying the aqueous pre-coat adhesive as a spray or foam. It is noted Smedberg teaches the pre-coat can be applied by means other than roll coating (Column 3, lines 37-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the aqueous pre-coat adhesive taught by Smedberg as modified by the admitted prior art (or the alternative) using any well known and conventional technique such as by spraying or foaming as shown for example by Kato as these were well known alternatives in the art for applying an aqueous pre-coat adhesive to a primary backing wherein the use of any one of the techniques, roll coating, spraying, or foaming, would have the same result.

Regarding claims 16 and 17, while Smedberg teaches the use of organic polymer components that are crosslinkable, Smedberg is silent as to a specific teaching of crosslinking the organic polymer component of the aqueous pre-coat adhesive. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the organic polymer

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component of the aqueous pre-coat adhesive taught by Smedberg as modified by the admitted prior art (or the alternative) organic polymer components that are crosslinked (and including crosslinking agent) as it was known in the art to use crosslinkable organic polymer components (and crosslinking agents) in an aqueous adhesive as shown for example by Kato to manufacture tufted carpet with improved fitting ability and tufted carpet more suitable for being walked upon.

Regarding claim 20, Smedberg does not specifically disclose using styrene acrylate copolymer as the organic polymer component of the aqueous pre-coat adhesive. However, Smedberg teaches the use of organic polymer components including polyvinyl acetate, styrene/butadiene copolymer, ethylene/vinyl acetate copolymer, etc., and Smedberg is not limited to any particular organic polymer. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the organic polymer component of the aqueous pre-coat adhesive taught by Smedberg as modified by the admitted prior art (or the alternative) styrene acrylate copolymer as it was a well known alternative organic polymer component to polyvinyl acetate, styrene/butadiene copolymer, ethylene/vinyl acetate copolymer, etc. in aqueous adhesives in the art as shown for example by Kato.

Kato discloses using an aqueous adhesive or a crosslinkable aqueous adhesive in addition to a binder to adhere a primary backing (e.g. tufted carpet) to a secondary backing (Column 4, lines 16-37 and 41-68). Kato teaches that the aqueous adhesive comprises an aqueous component and an organic polymer component wherein the organic polymers may include styrene acrylate copolymer, e.g. s styrene-methyl methacrylate copolymer, styrene-n-butyl acrylate copolymer, etc., polyvinyl acetate, styrene/butadiene copolymer, ethylene/vinyl acetate copolymer, etc. (Column 6, lines 63-68 and Column 7, lines 1-4). Kato teaches applying the

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aqueous adhesive as a spray, foam, or the like (Column 8, lines 13-15). Kato teaches the crosslinkable aqueous adhesive forms a tufted carpet having improved fitting ability and a tufted carpet more suitable for being walked upon (Column 3, lines 51-57).

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Smedberg and the admitted prior art as applied above in paragraph 5 or in the alternative as applied above in paragraph 6, and further in view of Bogdany (U.S. Patent 4,836,871).

Smedberg and the admitted prior art as applied above teach all of the limitations in the claims except for a teaching on applying the aqueous pre-coat adhesive as a froth. It is noted Smedberg teaches the pre-coat can be applied by means other than roll coating (Column 3, lines 37-41). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the aqueous pre-coat adhesive taught by Smedberg as modified by the admitted prior art (or the alternative) using any well known and conventional technique such as by frothing as shown for example by Bogdany as this was a well known alternative in the art for applying an aqueous pre-coat adhesive to a primary backing wherein the use of any one of the techniques, roll coating or frothing, would have the same result.

Bogdany discloses applying a carpet backing adhesive comprising organic polymer components such as those taught by Smedberg and corn syrup to a tufted carpet primary backing as a froth to adhere a secondary backing (Column 2, lines 12-15).

9. Claims 5, 36, and 37, are rejected under 35 U.S.C. 103(a) as being unpatentable over Smedberg and the admitted prior art as applied above in paragraph 5 or in the alternative as applied above in paragraph 6, and further in view of Bieser et al. (WO 98/38375).

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Regarding claim 5, Smedberg teaches particular thermoplastic binders having for example a melt index (MI) of 1.2-35 (Column 7, lines 10-13 and Column 8, lines 40-41). Furthermore, Smedberg and the admitted prior art are not limited to any particular thermoplastic binder materials as Smedberg and the admitted prior art disclose a plurality of different materials useful as the thermoplastic binder including polyethylene and polypropylene such that each material used would have a different MI. It would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize particular MI values in Smedberg as modified by the admitted prior art (or the alternative) as a function of the particular thermoplastic binder material used as doing so would have required nothing more than ordinary skill and routine experimentation with it being further obvious to choose values within in the claimed range as it was known in the art substantially the same as that taught by Smedberg as modified by the admitted prior art or in the alternative to use thermoplastic binder materials having a MI within the claimed MI range, it also being noted polyethylene used has MI of 1-70 g/10min, as shown for example by Bieser et al.

Regarding claims 36 and 37, Smedberg and the admitted are silent as to using as the secondary backing one formed of polypropylene fabric with a thermoplastic binder needled thereto. However, neither Smedberg nor the admitted prior art are limited to any particular type of secondary backing. It would have been obvious to one of ordinary skill in the art at the time invention was made to use as the secondary backing taught by Smedberg as modified by the admitted prior art (or the alternative) any of the well known and conventional secondary backing materials such as woven polypropylene fabric with a thermoplastic binder in the form of fibers

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needed thereto as shown for example by Bieser et al. as only the expected results would be achieved.

Bieser et al. disclose a process for manufacturing a tufted carpet. Bieser et al. teach a tufted carpet comprising a primary backing material such as woven or non-woven polypropylene (Page 1, lines 36-37 and Page 2, lines 1-3). Bieser et al. teach the face yarn of the tufted carpet is made from various materials including nylon, polyester, and polypropylene (Page 30, lines 17-19). Bieser et al. teach a method for manufacturing the tufted carpet comprising supplying a tufted primary backing having a bottom surface (stitched side), applying to the bottom surface an aqueous pre-coat solution (stitch bind composition), drying the pre-coat, extruding a thermoplastic binder on the pre-coat, and laminating a secondary backing (additional backing) to the thermoplastic binder (Page 32, lines 28-30, Page 35, lines 21-23 and 30-33 and Page 36, lines 1-3). Bieser et al. teach the pre-coat comprises an aqueous component (e.g. water) and an organic polymer component that is film forming and thermoplastic (e.g. polyethylene, ethylene acrylic acid, etc.) (Page 32, lines 30-33 and Page 33, lines 1-3). Bieser et al. teach the organic polymer component is 10 to 75 percent by weight of the pre-coat (Page 33, lines 5-8). Bieser et al. teach using as the thermoplastic binder materials having an MI of 1 to 500 g/10 min, (most preferable 25 to 35 g/10 min), with a MI of 1 to 70 g/10 min when polyethylene thermoplastic binder is used (Page 28, lines 2-7 and Page 37, lines 18-31 and Page 38, lines 1-2). Bieser et al. further teach the backing materials may comprise woven polypropylene yarns with an optional thermoplastic binder in the form of nonwoven polypropylene fibers needed thereto (Page 44, lines 5-8, 21-25, and 29-32 and Page 45, lines 26-30).

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Response to Arguments

10. Applicant's arguments with respect to claims 1-27 and 34-45 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues, "As discussed more fully below, none of the rejected claims is obvious from Smedberg in view of the prior art considered admitted by the Examiner because Smedberg describes a carpet laminating process in which a hot melt adhesive formulation, not a thermoplastic binder, is used as a backsize adhesive or binder." The claims require "the thermoplastic binder comprises a thermoplastic polyethylene, polypropylene, or ethylene propylene copolymer resin or combination thereof" (See claim 1). Smedberg teaches, "A variety of hot melt adhesives are useful as the backsizing composition in the present process. While such adhesives can consist solely of a polymeric binder resin, such as an ethylene/vinyl acetate copolymer, for economic reasons they generally include substantial quantities of other ingredients. Thus, in addition to a polymeric binder resin, useful adhesive compositions generally contain at least one of the following ingredients: waxes, fillers, and resin extenders. Also, in addition to or in place of ethylene/vinyl acetate resins other types of binder resins such as polyethylenes and ethylene/acrylate or methacrylate copolymers can be used." (Emphasis added see Column 6, lines 66-75 and Column 7, lines 1-3). Thus, clearly Smedberg teaches the use of a backsizing composition comprising polyethylene.

Applicant further argues, "To the contrary, persons skilled in the art would clearly understand and recognize that Smedberg's low viscosity hot melt backsize adhesive formulation, with its viscosity depressing wax and low softening point resin extender components, is applied by liquid application techniques, not in solid form or as an extruded melt." As shown above,

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Smedberg does not require viscosity depressing wax and low softening point resin extender components. Smedberg suggests the use of a thermoplastic binder comprising only polyethylene. Furthermore, as noted by applicant in the response Smedberg teaches the binder may be applied by means other than applicator rolls and the application of binder materials by extrusion or in solid form is generally known in the art such that the combination of Smedberg and the admitted prior art is proper.

Regarding applicants arguments to claims 5, 16, and 17 note the new rejection above.

Regarding applicants arguments to claims 6-8, Smedberg teaches the aqueous pre-coat adhesive may be applied by means other than applicator rolls, and the application of aqueous adhesives by spraying, foaming, or frothing to a primary tufted carpet backing is well known and conventional in the art as shown for example by Kato and Bogdany.

Regarding applicants arguments to claim 20, it is noted styrene acrylate is a well known and conventional organic polymer component in an aqueous adhesive used in the same art as Smedberg as an alternative to the materials suggested by Smedberg as shown for example by Kato.

Regarding applicants arguments to the particular primary backing and secondary backing materials, Smedberg is not limited to any particular type of primary backing, the suggestion of spunbound polypropylene or jute is merely exemplary, or secondary backing, such that the use of any well known and conventional primary or secondary backing was clearly contemplated and not excluded by Smedberg.

Regarding applicants arguments to Bieser, where Bieser is the primary reference, are moot as the rejection is withdrawn.

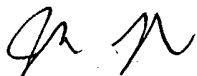
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Conclusion


11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff
May 24, 2004



JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300